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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,108	03/02/2004	Marc S. Weinberg	DPL-054	2444

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EXAMINER	
YU, MELANIE J	

ART UNIT	PAPER NUMBER
1641	

MAIL DATE	DELIVERY MODE
12/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/791,108	WEINBERG ET AL.	
	Examiner	Art Unit	
	Melanie Yu	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16 and 18-21* is/are pending in the application.

4a) Of the above claim(s) *1-12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-16 and 18-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment filed 12 October 2007 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 13-15, 17 and 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (US 2004/0211251).

Lee et al. teach a sensor comprising: a diaphragm (thin, dome-shaped membrane, par. 62) comprising a conductive portion (elastomer membrane can be made to be conductive, par. 114); a selective coating on a first face of the diaphragm (membrane with chemical binding site, par. 128; par. 41; par. 61); and a counter electrode spaced from and in opposition to the diaphragm (second electrode distanced below the elastomer membrane, par. 114); and a means for equalizing a pressure on each of the first and second faces of the diaphragm (in one embodiment a capillary tube connected to reaction chamber and gas flow through an aperture in the substrate is used to fill the chamber with gas to increase the pressure in the chamber, par. 151; in another embodiment pressure is not used to keep the diaphragm raised additional gas is not added to the chamber at the second face of the diaphragm after formation therefore the pressure on both faces of the diaphragm remain the same through production and a means for equalizing the pressure on the first and second face of the diaphragm is provided during assembly, par. 154, 157 and 159), wherein

interaction of the selective coating with an analyte deforms the membrane (Fig. 20a shows no binding and Fig. 20b shows deformation of the membrane upon binding, par. 41) and thereby alters a capacitance of the sensor so as to indicate a degree of interaction (capacitance is measured between elastomer membrane and second electrode, par. 114; change in capacitance indicates change in stress on membrane and measures concentration of analyte, par. 134; par. 41; par. 132).

With respect to claims 14 and 15, Lee et al. teach the diaphragm being compositionally uniform and being conductive (membrane is made of PDMS and is conductive, par. 114).

Regarding claim 19, Lee et al. teach the coating covering the first face of the diaphragm, and this includes a coating covering a central half of the first face (molecules providing reaction sites are coated on exterior membrane surface, par. 16).

With respect to claims 20 and 21, Lee et al. teach the device further comprising circuitry for reporting the presence of the analyte (yes/no detection, par. 133) and the circuitry is also capable of reporting concentration of analyte (surface stress can correspond to concentration, par. 134). Although Lee et al. do not specifically teach that the concentration is measured, Lee et al., at paragraph 134, teach that surface stress can correspond to the concentration of analyte in a sample. Since the circuitry of Lee et al. is capable of determining the surface stress, the circuitry is also capable of determining the concentration of analyte in a sample.

Allowable Subject Matter

2. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

3. The prior art fails to teach a diaphragm having a surface coating on a first substrate where pressure is equalized on both sides of the diaphragm through perforations through the counter electrode.

Response to Arguments

4. Applicant's arguments filed 12 October 2007 have been fully considered but they are not persuasive. Applicant argues that the membrane of Lee et al. fails to provide a means for equalizing pressure on the first and second faces of the diaphragm. Applicant's argument is not persuasive because Lee et al. teach alternative embodiments that provide an equalized pressure on both sides of the diaphragm. Examples 1 and 2 of Lee et al. describe a membrane that is curved by metal or hard silicon nitride, wherein the change in deflection (not the change in pressure in the cavity below the diaphragm) and the amount of analyte is determined by a measuring a change in capacitance. In examples 1 and 2 the pressure on the second face is the same as the pressure on the first face during production. Since gas is not pumped into the area facing the second face of the diaphragm, the pressure remains the same and therefore equalized on both faces.

5. Applicant's arguments with respect to claim 18 and the previous rejections under Wohlstadter et al. have been fully considered and are persuasive. The previous rejections of the claim have been withdrawn.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory

period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Yu whose telephone number is (571) 272-2933. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Melanie Yu
Patent Examiner
Art Unit 1641

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